

24. *Radical Cure of Hydrocele.*—A man, aged 31, has recently been under Mr. Lloyd's care, in St. Bartholomew's, on account of a hydrocele, which had been several times tapped, and on one occasion treated by the injection of iodine, with the hope of permanent cure. The latter expedient, however, had failed, the sac having refilled. Mr. Lloyd adopted a plan, which has long been a favourite with him, of introducing a little of the red precipitate into the sac. The fluid having been drawn off by a canula, large enough to allow a director to enter it, the latter instrument, oiled, and then dipped in the powder so as to carry a few grains adhering to it, was introduced and moved about in the cavity. The introduction was repeated two or three times; some inflammation followed, and a perfect cure ensued. The practice has the advantage over that by injection of not requiring any special apparatus. Mr. Lloyd believes it also to be more uniformly successful.—*Med. Times and Gaz.*, April 12, 1856.

OPHTHALMOLOGY.

25. *Anemic Protrusion of Eyeball.*—ROBT. TAYLOR, Esq., Surgeon to the Central London Ophthalmic Hospital, relates (*Med. Times and Gaz.*, May 24th, 1856) the following cases, illustrative of a disease which has only within a recent period attracted attention, and the true pathological explanation of which is yet a desideratum.

"Case 1.—Mrs. T., aged 26, has been married eight years, but has never been pregnant. Her menstrual periods have been regular; but the discharge has always been in excess, and she has had several attacks of menorrhagia, losing much blood on each occasion. She has long been subject to leucorrhœa, which, six months ago, became very profuse, and shortly after this she was attacked with palpitation of the heart. About the same time she observed a swelling in her throat, and her eyes became so prominent as to attract the attention of her friends. These symptoms, which appeared as nearly as possible simultaneously, have gone on increasing slowly but steadily. Leeches and tincture of iodine have been applied to the throat, but without producing any diminution in the swelling.

Present State.—She is very pale and feeble. She suffers from spinal tenderness, intercostal neuralgia, ringing in the ears, œdema of the ankles, and other symptoms of anæmia. She is exceedingly nervous, starting and trembling violently when suddenly addressed; she has occasional hysteric fits. The pulsations of the heart average 134 per minute, and are very distressing; the carotid arteries also throb violently. The thyroid gland is enlarged to about three times its natural size, its surface being smooth and regular; several of its enlarged arteries can be felt pulsating near the surface. The eyeballs protrude so as to expose a broad rim of the sclerotica around the margin of the cornea, giving her a wild and staring appearance, which attracts attention and exposes her to annoyance in the streets. The amount of protrusion varies, within certain limits, with the degree of nervous excitement, being always much greater when she is agitated. The eyeballs can be readily replaced by gentle pressure, but they speedily resume their prominence when the pressure is remitted. There is some congestion of the conjunctival vessels, and slight increase of the Meibomian and mucous secretions; in other respects the eyes have a healthy appearance; their movements are perfect in every direction, and the sight is unimpaired. The eyelids, which are of a dusky colour, cannot be closed without a slight muscular effort.

The treatment, which extended over a period of three months, consisted in the administration of iron in several forms; astringent injections, per vaginam, to check the leucorrhœa; and belladonna plasters over the region of the heart, which afforded great relief by diminishing the violence of the palpitation. As her general health improved, the heart's action approached more and more to the natural standard, and the prominence of the eyeballs was reduced, until

they ultimately resumed their proper position; but no change took place in the size of the thyroid gland, so long as she remained under observation. She subsequently had a slight relapse, brought on apparently by mental agitation, but a similar plan of treatment again proved successful in a few weeks.

Case 2.—Mrs. C., aged 40, has had eight children, the last two of whom were twins, and were born four years ago. One of these she suckled for twelve, and the other for sixteen months; during which time, as on previous similar occasions, she menstruated regularly and abundantly. When she had suckled both infants for a year, she first observed an enlargement of her throat, and the swelling increased slowly for about two years, since which it has remained stationary. Some months after she first observed this enlargement her eyes began to protrude, so as to attract the attention of her friends. She then applied to a surgeon, who told her that she had disease of the heart—a fact which she then learned for the first time, as she had never felt the slightest uneasiness in that region; how long the palpitation may have existed it is impossible to say, as even now, although it is very violent, she is quite unconscious of it, unless when much excited.

Present State.—Pale, anemic, and highly excitable. The eyeballs protrude so as to expose a narrow rim of sclerotica around the cornea. They can be readily replaced by gentle pressure; their movements are perfect in every direction, and the vision is unimpaired. The protrusion varies with the amount of nervous excitement. The conjunctivæ are slightly injected, but in other respects the eyes appear to be perfectly healthy. The heart beats violently and rapidly, the pulsations being 142 per minute; but it is probable that this exceeds the usual standard, and is partly due to excitement, consequent on a stethoscopic examination. The carotid arteries pulsate strongly and visibly. The thyroid gland is enlarged, chiefly in a lateral direction, to more than thrice its natural size; its surface is smooth and regular.

The treatment was conducted upon the same general plan as in the preceding case, and extended, with one or two interruptions, over a period of five months. The general health was restored, and the eyes resumed their natural position; but there was not any diminution in the size of the goitre.

Case 3.—Mrs. R., aged 26, has been married nine years, but has never been pregnant. For many years she has been subject to profuse leucorrhœa, and her health has been still further impaired by insufficient nourishment, and by close application to needlework. Two years ago, she began to suffer from palpitation of the heart, and soon after this her throat became enlarged, and her eyeballs unnaturally prominent.

Present State.—Pale, thin, and excessively nervous and excitable, trembling almost convulsively when suddenly spoken to, or even when looked at. The eyes protrude to such an extent that she cannot, by any effort close the eyelids, and she complains much of the discomfort caused by their remaining half-open during sleep. The eyeballs can be replaced by gentle pressure; their movements are perfect, and the sight unimpaired. The protrusion varies considerably, with the amount of nervous excitement. The conjunctivæ are somewhat congested; in other respects the eyes appear perfectly healthy. The thyroid gland is enlarged to about four times its natural size, and numerous dilated arteries can be felt near its surface, which is smooth and regular. The heart, under the agitation of being examined, beats violently, the pulsations being 144 per minute. The carotid arteries also throb visibly.

This patient remained under treatment for two months, the remedies employed being iron, astringent injections per vaginam, and belladonna plasters over the region of the heart. She had improved considerably in health, and her eyes had receded so far that she could close the eyelids without any effort, when she left town, and remained without medical treatment of any kind for some months. A short time since, she again made her appearance at the hospital, in nearly the same condition as at her first visit. The treatment has been resumed, and she is again progressing favourably.

In each of the above cases, a careful stethoscopic examination of the chest was made by my friend Dr. Hare, who has kindly permitted me to condense and make use of his report.

In the first there was some hypertrophy, with a little dilatation of the heart, but no valvular disease. In the second, the condition of the heart was almost exactly similar, but there was a doubtful murmur with the first sound, the exact nature of which could not be clearly ascertained, on account of the excited state of the circulation at the time. In the third, there were slight hypertrophy and dilatation, with a distinct, though not loud systolic murmur at the base, 'which,' Dr. Hare says, 'may be anemic.'

Case 4.—I have reserved this case for the last, although it is the first entered in my case-book, as I am desirous of calling attention to a very striking peculiarity which it presented, in the sudden appearance of the exophthalmia.

Letitia M., aged 21, was subject to fits, probably epileptic, in childhood. These gradually ceased as she attained the period of puberty, but she remained excessively nervous and hysterical, and has long suffered from spinal tenderness, intercostal neuralgia, coldness of the extremities, and other symptoms of nervous debility. Three years ago, after a fall by which she severely bruised her right side, she began to suffer from palpitation of the heart; this has continued ever since, being constant and annoying, interrupting her sleep, and greatly aggravated by the slightest agitation or exertion. One year after this, the thyroid gland began to enlarge, and gradually increased until it attained its present volume, about four times that of the healthy gland. She was for some time under hospital treatment for this, as well for the palpitation, but without receiving any benefit. About a week before I first saw her, she felt an unusual sensation in the brows one morning on awaking, and on looking in the mirror, she found that her eyes, which had been perfectly natural in appearance when she retired to rest, were protruded to such an extent that she could scarcely close the eyelids.

Present State.—The eyeballs protrude, as above described: their movements are perfect; the sight is not impaired, and they appear to be perfectly healthy. They can be readily replaced by gentle pressure, but resume their abnormal position when the hand is removed. She says that the prominence varies very much, and that at times it is scarcely perceptible. The action of the heart is very violent; the pulsations, under the excitement of being examined, are 140 per minute. There is a slight blowing murmur with the first sound; on percussion, the dulness over the heart is rather more extensive than natural. The carotid arteries throb violently. The enlarged thyroid gland is smooth and regular, and several of its dilated arteries can be felt near the surface.

Under treatment of a similar character to that adopted in the preceding cases, and extending over rather more than two months, the eyes had very nearly resumed their normal position, and the general health was very much improved, but there was no diminution in the size of the thyroid gland. She then left town, and I have not had an opportunity of seeing her since.

In addition to the above, I have collected from the various medical journals twenty-one cases, which have been given sufficiently in detail to render them free from doubt; others are alluded to as having occurred, but without any particulars being given. Of the twenty-five reported cases, twenty occurred in females, and four in males; in one the sex is not mentioned, but, from the context, the patient appears to have been a male. Three deaths have occurred, in each instance in males. In two there was a post-mortem examination. In the first, related by Sir Henry Marsh, the patient had long suffered from extensive organic disease; there was considerable dilatation, with hypertrophy, chiefly of the left side of the heart, and some amount of valvular disease, chiefly of the right; the right internal jugular vein was very much dilated; the patient died of general anasarca, followed by erysipelas and gangrene. In the second, detailed by Dr. Begbie, the patient suffered from organic disease of the heart, enlargement of the liver, general dropsy, and jaundice; of which complication of disorders he died. The heart was found to be large, soft, and flaccid; all the cavities, but especially the ventricles, were dilated; the valves were larger than usual, having accommodated themselves to the increased size of the cavities; but they were otherwise normal. The aorta, in comparison with the pulmonary artery, was small. The internal jugular veins were much dilated. The blood in the heart and great vessels was very fluid. In none of the other

cases has stethoscopic examination detected any very serious amount of cardiac disease; in some there has been slight dilatation with thinning of the walls, but without valvular disease; in others there does not appear to have been any structural alteration.

With one exception, the enlargement of the thyroid gland has appeared to be due to simple hypertrophy of its normal structures, with a great increase in the activity of its circulation and size of its bloodvessels. In the exceptional case recorded by Mr. MacDonnell, the goitre was of the cystic variety, and had attained a considerable size.

In no instance has there been any disease of the eyeball. It is true that in a few cases it is described as having been enlarged; but this is evidently a mistake, as the vision was unimpaired. The eyeball is not subject to enlargement, except as a consequence of long-continued inflammatory disease, destructive of vision, by which the tough, unyielding tissue of the sclerotica is softened, and gives way to the pressure from within, bulging, generally, in a very irregular manner. The protrusion must be due to some other cause, the nature of which, in connection with the general pathology of the disease, we have now to consider.

It must be borne in mind that the protrusion may, as in *Case 4*, come on suddenly; that it varies in degree according as the patient is agitated or tranquil; and that the eyeballs can be replaced in their natural position by gentle pressure. It cannot, therefore, be due to any solid tumour, or fluid effusion in the orbit; nor can it be ascribed to paralysis of the recti muscles, for the eye can be moved in every direction as readily as in health. The cause to which it is most commonly ascribed is, congestion of the deep-seated veins of the orbit; and this seems to afford a more probable explanation than any other, both from its being quite reconcilable with the variable amount of exophthalmia, and from the well-known effect of impeded return of blood from the head in causing prominence of the eyes, as witnessed, for example, in strangulation. But how are we to account for this congestion; and how are we to explain its association with the peculiar condition of the heart and the thyroid gland? for the cases already on record are too numerous to permit us to suppose that these are merely coincident symptoms; together they evidently constitute a distinct disease, and there must be some common cause capable of producing each, and of rendering them mutually dependent upon each other.

It has appeared to me, that a key to the true solution of this question has been given by Dr. Marshall Hall, in his valuable writings on the subject of convulsive and paroxysmal diseases. He has shown that, in such diseases, there is a tendency to spasm of the muscles of the neck; and that the seizures are the direct result of impeded return of blood from the head, the deep-seated veins being compressed by the irregular muscular action. Now, the subjects of anemic protrusion of the eyeball are eminently of the class to which Dr. Hall's remarks apply. Some of them are subject to fits, hysterical or epileptic; in all the nervous system is in a state of extreme excitability, so that the slightest agitation produces starting and trembling, sometimes so violent as almost to resemble convulsion in a minor degree. Is it not probable that, as in the confirmed epileptics, there may, in these cases also, be an impediment to the free return of blood from the head, only to a less amount, and, perhaps, more continuously? In the only two post-mortem examinations that have been made, the internal jugular veins were found to be greatly dilated, as though they had long been subject to distention by some obstructing cause towards the lower part of their course; and, as in neither case was there any solid growth by which they could have been compressed, it does not seem unreasonable to suppose that the obstacle was due to muscular spasm. The same explanation would account for the enlargement of the thyroid gland, which, as has been already stated, is due to simple hypertrophy of its normal structures, and would be a probable result of long-continued hyperæmia. The palpitation of the heart does not require any explanation here, as it is common to all cases of anæmia, whether accompanied or not with protrusion of the eyes.

The different stages of the disease, then, may be stated as follow: First. Some debilitating disease, or exhausting discharge, producing—secondly, anæ-

mia; thirdly, that peculiar state of the nervous system, in which there is a tendency to spasm of the muscles of the neck; fourthly, as the result of such spasm, and consequent impeded return of blood from the head, hyperæmia, and hypertrophy of the thyroid gland, and dilatation of the veins of the orbit, causing exophthalmia.

This explanation I offer merely suggestively. I am well aware that it is open to many objections; but none have as yet occurred to me which appear insuperable. It is supported by the histories of all the carefully described cases, and by the necroscopical appearances in the only two post-mortem examinations that have been made; and it accounts for the association of three symptoms, the connection of which it seems otherwise impossible to divine. If it fail to stand the test of rigid investigation, it may still have the good effect of attracting the attention of those who are able to expose its errors, and to substitute a perfect one in its place.

It is unnecessary to dwell at any length upon the treatment, which is essentially that of anæmia. A few cases have occurred in which patients have been attacked who were already the victims of extensive diseases of the thoracic and abdominal viscera, and in such the treatment must be merged in that of the more serious disorder. But in the great majority of instances, any structural changes that have been detected have been comparatively slight, and amenable to remedial measures. The patient should, therefore, be encouraged to look forward with confidence to a successful issue. In the words of Dr. Begbie, whose valuable paper contains the latest and most complete *résumé* of the subject, 'it is of great consequence to impress those suffering from this affection with the belief of its curable nature, and to urge upon them the persistent employment of the means of restoring the red particles of the impoverished blood, and improving the general health.' The *starting point* of the disease must first be ascertained, and in females this is almost always some form of exhausting discharge in connection with the uterine organs, which must be checked by appropriate remedies. The various preparations of iron, nutritious and unstimulating diet, pure air, and absence of excitement; the treatment, in short, which is found successful in cases of anæmia not thus complicated, are the further means to be adopted. No local applications are necessary, either to the eyes or to the thyroid gland; but as some patients are dissatisfied without them, they may be directed to use the eye-douche, or to bathe the eyes with cold water from time to time. The only local application which I have found really serviceable, has been a belladonna plaster over the region of the heart, which, in some instances, has had a marked effect in diminishing the violence of the palpitation. The progress towards recovery is generally slow, and the treatment may require to be prolonged over many months; but if judiciously selected and carefully persevered in, we may look forward with confidence to the restoration of the general health, and the complete disappearance of the deformity caused by the unnatural prominence of the eyes.

In many of the recorded cases, the swelling of the thyroid gland has also subsided, but this has by no means uniformly followed; it has occurred, so far as I am able to judge, more frequently in private patients, who are more under control, and have the means of carrying out more fully the prescribed medicinal and dietetic regulations, than in the less regular and less favourably situated class to which the out-patients of hospitals belong. But as the enlargement is rarely to any extent, and as a certain amount of diminution invariably takes place, the persistence of a slight and scarcely perceptible fulness is not a matter of any importance."

26. *Observations on Cataract.*—In commenting on a case of cataract recently operated, Mr. WHARTON JONES made some excellent clinical remarks on the subject of cataract generally, as the result of his experience in University College Hospital. The opinions expressed by the operator are corroborated also by the scientific observations of Mr. Bowman and Mr. Critchett at the Ophthalmic Hospital in Moorfields, so that they may be taken as a fair representation of London ophthalmic practice on the subject of cataract.

As to the use of atropine to dilate the pupil, though this was used in the